# The Changing Landscapes of FinTech and RegTech: Why the United States Should Create a Federal Regulatory Sandbox

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ABSTRACT

*This Note introduces the FinTech industry's emergence and its subsequent birth to the closely-related RegTech industry. After analyzing the disruptive force powering both industries, and proving each of their anticipated longevities in our economic system, this Note discusses the lack of legislative clarity undermining the future of the industries in the United States. This Note then evaluates the effectiveness of the newly popular regulatory sandboxes being implemented in jurisdictions across the globe. After describing state regulatory sandbox developments, this Note will describe why the United States legislature should adopt a federal regulatory sandbox to accommodate the changing FinTech and RegTech landscapes underlying the financial services industry.*

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## INTRODUCTION

The burgeoning Financial Technologies ("FinTech") and Regulatory Technologies ("RegTech") industries offer consumers, investors, entrepreneurs and financial institutions a glimpse into the future while simultaneously standing in the present.[1] The plethora of emerging technologies in many cases are quickly ushering out mundane aspects of life and replacing them with more efficient alternatives.[2] The world, whether conscious of it or not, has entered a new era of technological disruption.[3] The disruptive nature powering this new wave of ground-breaking technology has left legislators across the globe at a crossroads. At a minimum, most would agree that this never-before-seen technology is here, and it is here to stay.[4]

It is against this backdrop that legislators have taken widely different approaches in acclimating towards the inevitable future. One side of the debate has opted for a proactive approach, mainly in the form of "regulatory sandboxes,"[5] that strive to foster innovative technological solutions through malleable legislation. Others have opted for a passive stance in regulating new FinTech and RegTech companies[6] due to the unknown risks behind this new wave of technological disruption.[7]

To adequately address the current legislative confusion, a helpful parallel can be drawn between the emerging industries of FinTech and RegTech and other industries that have undergone rapid technological change. When trying to grow a business, entrepreneurs *do not* typically advocate for more

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[1] *See generally* Tim O'Sullivan, *A Glimpse into the Future of the Fintech Industry*, NETSOL TECH., INC., http://www.netsoltech.com/a-glimpse-into-the-future-of-the-fintech-industry/ (last updated Jan. 12, 2018).

[2] *See* Dan Billings, *Blockchain is the next big regulatory debate in finance*, DECENTRALIZE TODAY (Apr. 21, 2016), https://decentralize.today/financial-technology-or-fintech-is-the-latest-in-a-series-of-trendy-start-up-segments-that-is-880a7115ed8b.

[3] *See generally* John L. Douglas, *New Wine Into Old Bottles: Fintech Meets the Bank Regulatory World*, 20 N.C. BANKING INST. 17 (2016).

[4] *See* Editors, *Why Fintech is Here to Stay*, FIN. TECH. TODAY (June 22, 2017), https://www.financialtechnologytoday.com/why-fintech-is-here-to-stay/.

[5] *See Regulatory Sandbox*, FIN. CONDUCT AUTHORITY, https://www.fca.org.uk/publications/documents/regulatory-sandbox (last visited Mar. 29, 2018).

[6] *See Types of fintech regulation: active, passive and restrictive*, BANCO BILBAO VIZCAYA ARGENTARIA (Jun. 5, 2016), https://www.bbva.com/en/types-fintech-regulation-active-passive-restrictive/.

[7] *See* Hayley McDowell, *ESMA takes 'wait and see' regulatory approach to Blockchain*, GLOBAL CUSTODIAN: FINTECHQ (Jan. 24, 2017), https://www.globalcustodian.com/esma-takes-wait-and-see-regulatory-approach-to-blockchain/ (explaining the passive stance is sometimes referred to as the 'wait and see approach.' Under this model, regulators take their time in passing legislation as they "actively try to learn more about the innovation.").

regulation within their own industry.[8] This is likely because regulations, whether in the form of compliance, reporting, minimum wage, licensing, or tax requirements, are likely to hinder bottom-line profitability.[9]

For example, consider Uber's prominent rise from a start-up company to ride-sharing behemoth. In its infancy, the mobile application-based company benefited from not having to conform with existing 'ride-hailing' regulations in many jurisdictions because it was not coined a traditional taxi company, even though it performed primarily the same service for consumers.[10] Traditional taxi companies quickly began to lose market share to new competitors due in part to the attractive low barriers of entry for application-based ride services companies.[11] Despite the new ride services companies' immense popularity amongst its consumers, legislators eventually needed to respond to the existing taxi service industry requests to impose appropriate legislation on the new businesses.[12]

As in the ride-services industry, U.S. legislators should carefully consider amending the patchwork nature of the existing regulatory structure to account for start-ups that perform services substantially similar to financial institutions.[13] The resulting legislative clarity will not only hold start-ups accountable, but also encourage new investments in the lucrative FinTech and RegTech industries.[14] Whether one thinks the appropriate response is proactive or passive, the regulatory environment must adapt to the disruptive technologies present in the market.[15] The rapid pace at which start-ups developed, and existing financial institutions implemented, ground-breaking technology surged past the rate at which regulators reacted to these changes. Therefore, U.S. legislators must collaborate on a solution before the United

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[8] *See* Frank Williams, *The Effects of Government Policies on Businesses*, CHRON (Feb. 5, 2018), http://smallbusiness.chron.com/effects-government-policies-businesses-65214.html.

[9] *Id.*

[10] *See* Andrew J. Hawkins, *The five issues holding Uber and Lyft back in big states*, THE VERGE (Sept. 21, 2016), https://www.theverge.com/2016/9/21/12987566/uber-lyft-five-issues-big-state-legislation-failure-schaller.

[11] *See* Edward Helmore, *End of the road? New York cabs face uncertain future in wake of Uber and Lyft*, THE GUARDIAN (July 29, 2017), https://www.theguardian.com/us-news/2017/jul/29/new-york-yellow-cabs-taxis-uber-lyft.

[12] *See* Andrew J. Hawkins, *Uber is on a collision course with New York City's mayor again*, THE VERGE (Dec. 4, 2015), https://www.theverge.com/2015/12/4/9851000/uber-nyc-bill-de-blasio-report-investigation-cap-tax-cuomo.

[13] *See* John Pizzi, *Fintech's Next Wave*, FORBES (Mar. 7, 2017), https://www.forbes.com/sites/forbesfinancecouncil/2017/03/07/fintechs-next-wave/#2dabe42663a3.

[14] *See* Nikolai Kuznetsov, *US regulatory environment threatens rise of fintech*, TECH CRUNCH (Feb. 16, 2017), https://techcrunch.com/2017/02/16/us-regulatory-environment-threatens-the-rise-of-fintech/.

[15] *Id.*

States is left behind its counterparts across the globe.

## I. *CONTEMPORARY DISRUPTION IN THE FINANCIAL WORLD*

### *A. The Emergence of FinTech*

While it is still possible to load up your car, drive to the bank, and discuss obtaining a loan or opening a savings account with your broker, the once common process is becoming increasingly obsolete as each second ticks or perhaps more accurately these days, "displays," on your iWatch.[16] Human interaction once thought to be vital to securing financial goals is being supplanted by the emergence of digital alternatives.[17] The ambit of digital technologies available to consumers provides more efficient alternatives at the consumers' fingertips.

Welcome to the burgeoning field of FinTech. This innovative landscape continues to threaten business segments within the financial services industry, including lending, investment management, analytics, big data, and customer service.[18] To illustrate the seismic impact FinTech is wreaking upon our society, consider the emergence of Robo-Advisors.[19] These automated portfolio management services are run exclusively through computer algorithms and have developed into a mainstream, cost-effective alternative for some financial institutions and consumers.[20] From the financial institution's forward-looking perspective, Robo-Advisors would not only eradicate the need to allocate resources towards recruiting, hiring, and training financial advisors in the short-term, but also drastically reduce the financial institution's costs on account maintenance and customer service.[21] In turn, these efficient measures could trickle-down to the consumer, making access to investment management services much easier, convenient, and more

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[16] *See* APPLE IWATCH PRODUCT DESCRIPTION, https://www.apple.com/apple-watch-series-1/ (last visited Mar. 17, 2018).

[17] *See* Madhvi Mavadiya, *Artificial Intelligence: Removing the Human from Fintech*, FORBES (Feb. 27, 2017), https://www.forbes.com/sites/madhvimavadiya/2017/02/27/artificial-intelligence-human-fintech/#60e7507a46a1. Bank branches are experiencing less customer traffic in stores because of customers' proclivity to opt for the ease, efficiency, and convenience of new technological developments.

[18] *See* Matthew Blake, *5 things you need to know about fintech*, WORLD ECON.F. (Apr. 20, 2016), https://www.weforum.org/agenda/2016/04/5-things-you-need-to-know-about-fintech/. Blake describes FinTech as a welcomed disruption in notoriously static industries because of its uncanny ability to use "big data and superior analytics" to tailor products and services to consumers in ways that traditional institutions cannot emulate.

[19] *See* Arielle O'Shea & Anna Louise-Jackson, *Best Robo-Advisors: 2018 Top Picks*, NERDWALLET (Jan. 9, 2018), https://www.nerdwallet.com/blog/investing/best-robo-advisors/.

[20] *See id.* Institutions have begun implementing robo services to its products and services for customers to cut costs.

[21] *Id.*

affordable.[22] Both investors and financial institutions will reap these benefits in the future.

Robo-Advisors are merely just one example of how the emergence of FinTech impacts existing business models. If nothing else, its efficiency and widespread acceptance by prominent institutions affirm that FinTech is here, and it is here to stay.[23] Incumbent financial institutions that once viewed the rise of FinTech as a threat to their very existence are now investing in their own development of FinTech, or are actively seeking partnerships with start-ups to counter consumers' growing discontent with outdated financial services.[24] Illustrating this shift in strategy, KPMG estimates that Q2'17 alone accounted for $8.4 billion in total investment for start-ups and existing FinTech companies, more than doubling its estimate for Q1'17.[25]

One plausible justification for FinTech's robust growth and acceptance as a disruption to the status quo is that FinTech's innovative technology has created several distinct niches within the diverse space.[26] Some subcategories within the ever-expanding FinTech Ecosystem include Personal Finance, Blockchain & Bitcoin, InsurTechs, Digital Banks, Payments & Remittances, Alternative Finance, and RegTech.[27] Although this disruptive era has spawned an abundance of start-up companies, investors and entrepreneurs are beginning to question whether this robust growth period is sustainable given the lack of legislative clarity in the United States.[28]

Underpinning the emergence of FinTech across the globe, technological innovations are grossly outpacing regulatory responses across all

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[22] *See* Barbara A. Friedberg, *Pros & Cons of Using a Robo-Advisor*, INVESTOPEDIA, https://www.investopedia.com/articles/personal-finance/010616/pros-cons-using-roboadvisor.asp (last updated Mar. 27, 2018).

[23] *See* Dan Weil, *The Longevity of Robo Advisers and Retirement Planning*, INSTITUTIONAL INV. (Aug. 28, 2015), https://www.institutionalinvestor.com/article/b14z9wg470ny2y/the-longevity-of-robo-advisers-and-retirement-planning (suggesting the total dollar figure of assets under management for the top robo advisors could eclipse $2 trillion by 2020.)

[24] *See Framework for Banks to Partner with FinTech Companies,* SILICON VALLEY INNOVATION CENT., https://siliconvalley.center/frameworks-for-banks-to-work-with-fintech-companies/ (last visited Apr. 5, 2018).

[25] *See* KPMG, THE PULSE OF FINTECH Q2 2017 (2018), https://home.kpmg.com/xx/en/home/insights/2017/07/the-pulse-of-fintech-q2-2017.html (the total amount invested globally for FinTech companies and/or services for Q1'17 was $3.2 billion).

[26] *See Here's everything you need to know about the fintech ecosystem*, BUS. INSIDER: BUS. INSIDER INTELLIGENCE, http://www.businessinsider.com/fintech-ecosystem-overview-2016-1 (last updated Feb. 8, 2016, 12:10 PM).

[27] *See id.*

[28] Kuznetsov, *supra* note 14 (unlike countries in Asia and Europe, the United States has yet to adjust regulations to promote continued growth in the FinTech industry).

jurisdictions.[29] The fast-paced nature of the industry has made the regulatory approach for governing bodies a convoluted one. FinTech's development has added, and will continue to add, immense value for all constituents in the industry[30] despite the fact that start-ups face a tremendous amount of risk regarding successful implementation of their new services.[31] The inherent risk behind investment in a new company coupled with the murky legislative future of the industry may result in an undesirable hindrance on growth.

After suffering through the Global Financial Crisis of 2008, one could also justifiably view the current lack of regulation and lack of clarity for the future as an undue risk on the markets.[32] Among the many factors that contributed to the worst economic decline in the United States since the Great Depression, perhaps the most detrimental was the inherent lack or inadequacy of financial institution regulation.[33] In the wake of the Global Financial Crisis, new legislation such as the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank")[34] and the Jumpstart Our Business Startups Act ("JOBS Act"),[35] pressured financial institutions to comply with regulations. As a predictable result, regulatory costs and the subsequent penalties for failed compliance on financial institutions have never been higher.[36]

To illustrate the growing emphasis placed on regulation, consider how Citigroup has adapted to the new regulatory regime. In 2008, just before the Global Financial Crisis, Citigroup employed 14,000 risk, regulatory, and

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[29] *See* Brian Knight, *Modernizing Regulation to Encourage FinTech Innovation*, GEO. MASON UNIV. (Jan. 30, 2018), https://www.mercatus.org/publications/modernizing-regulation-encourage-fintech-innovation.

[30] *See* Ihab A. Khalil, *The Rapid Growth of Fintech: A Revolution in the Payments Industry*, ENTREPRENEUR (Aug. 8, 2016), https://www.entrepreneur.com/article/280402.

[31] *See* Mahesh Nair, *5 Common Hurdles That Can Disrupt Every Startup*, INC42 (Jan. 6, 2017), https://inc42.com/entrepreneurship/common-hurdles-disrupt-every-startup/ (estimating that 75% of new business ventures fail).

[32] *See generally* GLOBAL AGENDA COUNCIL ON THE FUTURE OF FINANCING & CAPITAL, WORLD ECONOMIC FORUM., THE FUTURE OF FINTECH: A PARADIGM SHIFT IN SMALL BUSINESS FINANCE 26 (2015), http://www3.weforum.org/docs/IP/2015/FS/GAC15_The_Future_of_FinTech_Paradigm_Shift_Small_Business_Finance_report_2015.pdf.

[33] *See* DANIEL K. TARULLO, FINANCIAL REGULATION SINCE THE CRISIS 2 (2016), https://www.federalreserve.gov/newsevents/speech/tarullo20161202a.htm.

[34] *See, e.g.*, Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 929-Z, 124 Stat. 1376, 1871 (2010) (codified at 15 U.S.C. § 78o).

[35] *See, e.g.*, Jumpstart Our Business Startups Act, Pub. L. No. 112-106, 126. Stat. 306 (2012).

[36] *See* Gavin Finch, *World's Biggest Banks Fined $321 Billion Since Financial Crisis*, BLOOMBERG (Mar. 2., 2017), https://www.bloomberg.com/news/articles/2017-03-02/world-s-biggest-banks-fined-321-billion-since-financial-crisis (explaining banks worldwide have paid a total of $321 billion in fines since 2008 due in large part to hefty regulation reform after the Financial Crisis of 2008).

compliance staff out of a total employee population of 323,000 (roughly 4.33%).[37] By contrast, in 2016, a time characterized by exorbitant compliance costs and inefficient regulatory mechanisms, Citigroup employed 29,000 risk, regulatory and compliance staff out of a total employee population of 219,000 (roughly 13.24%).[38] Citigroup's shift in compliance strategy is emblematic of the entire industry, as banks are forced to allocate more resources towards compliance regulation, leading to smaller employee populations and weaker profit margins. Perhaps cognizant of this trend in the industry, Congress recently passed The Economic Growth, Regulatory Relief, and Consumer Protection Act in May of 2018.[39] The bipartisan legislation is designed to ease Dodd-Frank regulatory burdens on small and medium-sized banks to help boost economic growth.[40]

### *B. Emergence of RegTech*

It is against this backdrop that RegTech, one of the subindustries of FinTech, has assumed center-stage in this debate. The United Kingdom's Financial Conduct Authority ("FCA") was the first to formally name the budding sector and explain that it applies to a subset of new technologies designed to help overcome the abundance of regulatory challenges and cybersecurity threats in the burgeoning FinTech industry.[41] Financial institutions are beginning to consider investments in RegTech services; new developments in artificial intelligence not only represent a means to reduce risk of failing to comply with regulations, but also offer an attractive way to improve customer experiences with their services and bottom-line margins.[42]

While this may come as a surprise to some, RegTech has existed for some time now (albeit without its catchy buzzword).[43] Financial institutions have used computer automated processes for decades to monitor and facilitate transactions.[44] Thus, the inevitable question arises: Why is RegTech just now becoming a hot-topic in the news?

A basic understanding of computer programming is useful in answering this question. Regulatory mechanisms at financial institutions, many of which are now outdated, are largely powered by pre-determined

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[37] CITIGROUP, INC., FORM 10-K 61 (2016).
[38] *Id.*
[39] Economic Growth, Regulatory Relief, and Consumer Protection Act, Pub. L. No. 115-174 (2018).
[40] *See* Jacob Pramuk, *Trump signs the biggest rollback of bank rules since the financial crisis*, CNBC (May 24, 2018), https://www.cnbc.com/2018/05/24/trump-signs-bank-bill-rolling-back-some-dodd-frank-regulations.html.
[41] *RegTech*, FIN. CONDUCT AUTHORITY (Sept. 12, 2017), https://www.fca.org.uk/firms/regtech.
[42] *E.g.*, Kevin Petrasic et al., *The Emergence of AI RegTech Solutions for AML and Sanctions Compliance*, RISK & COMPLIANCE, Apr.-June 2017, at 2.
[43] *See* Raj Chaudhary, *Regtech. Yes! It exists.*, FINEXTRA (Oct. 30, 2017), https://www.finextra.com/blogposting/14671/regtech-yes-it-exists.
[44] *See* Petrasic et al., *supra* note 42.

algorithms.[45] While these systems have powered our financial system for some time now, their utility is diminishing at an alarming rate as new FinTech services and cybersecurity threats emerge in the market. Specifically, these outdated algorithms simply are unable to adapt from their "discrete," pre-programmed molds to account for unexpected variables posed by new scientific computer technologies.[46]

The current regulatory system is in desperate need of a more efficient solution. Under many compliance programs at financial institutions, humans are needed to fill in the gaps left open by deficient regulatory mechanisms.[47] For example, the Financial Crimes Enforcement Network ("FinCEN") sets out detailed Anti-Money Laundering ("AML") requirements that banks must comply with under the Bank Secrecy Act.[48] Of the many obligations it imposes on banks, compliance personnel are required to audit and electronically file Suspicious Activity Reports, Currency Transaction Reports, and Reports of Foreign Bank and Financial Accounts.[49] The current compliance system is plagued with human inefficiencies resulting from manual document processing, limited data access, static credit scores unable to account for evolving situations, overhead costs, false positive reports, and disintegrated systems.[50] Not only do these tasks require significant inputs from financial institutions, but they also leave financial institutions widely susceptible to liability stemming from inevitable human error.[51] Cognizant of these deficiencies, established financial institutions have begun leveraging new RegTech solutions that are, in some cases, developed by start-ups.

### *C. New Developments in Artificial Intelligence*

New developments, particularly artificial intelligence ("AI"), are increasing RegTech's ability to replace outdated computer processes. Unlike current compliance regimes characterized by static algorithms and costly human intervention, AI can streamline efficiency and lower compliance costs through machine learning.[52] Financial institutions are beginning to implement machine learning algorithms that "learn" from its contemporaneous data analysis to identify peculiar transactional patterns[53] and predict chances

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[45] *Id.*
[46] *Id.*
[47] *See* Priyankar Bhunia, *RegTech innovation and adoption- Impact, drivers, barriers*, OPENGOV (Oct. 28, 2017), https://www.opengovasia.com/regtech-innovation-and-adoption-impact-drivers-barriers/.
[48] *See FinCEN's Mandate from Congress*, FinCEN, https://www.fincen.gov/resources/statutes-regulations (last visited Apr. 10, 2018) (discussing AML Requirements under the Bank Secrecy Act).
[49] *Id.*
[50] *See* Petrasic et al., *supra* note 42.
[51] *Id.*
[52] *Id.*
[53] *See id.* (discussing how significant improvement in AI technology has led to greater accuracy in spotting terrorist financing and money laundering transactions).

of default.[54] For example, Aidya, a Japanese based hedge fund, developed machine learning software that can function independently from human inputs.[55] Industry experts suggest approximately 1,360 hedge funds are following in Aidya's footsteps by making a majority of their trades through machine learning software.[56] Coupled with machine learning technology, new results stemming from machine learning software include automated document processing, real-time synchronization of credit reports (for higher accuracy), reduced number of false positive in connection with Office of Foreign Asset Control (OFAC) lists, pro-active (as opposed to reactive) detection of fraud and surveillance and substantially less overhead and maintenance costs.[57]

Most change comes with some level of opposition, and this is particularly true in the notoriously static and conservative banking industry. As banks invest in RegTech, there will inevitably be fewer resources to allocate towards human capital.[58] Eventually, an increased reliance on machines might lead to the categorical elimination of compliance jobs in the industry.[59] While this concern may not be completely without merit, it does seem a bit extreme. Institutions will always have a need for talented individuals equipped with proper leadership skills and core values to execute the needs of the firm.[60] In addition, widespread implementation of RegTech advances will surely sweep in some positives for human productivity in regulation.[61]

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[54] *See* Pramod Nagabushan, *Artificial Intelligence and Regtech: The changing face of compliance in banking*, INFOSYS LTD. (Jun. 28, 2017), http://www.infosysblogs.com/finspeak/2017/06/artificial_intelligence_and_re.html (AI developments have enabled institutions to sift through big data in real-time, significantly improving the accuracy by which it might predict default).

[55] *See* Tali Soroker, *Machine Learning Hedge Fund: Artificial Intelligence, Algotrading and Hedgefunds*, I KNOW FIRST DAILY MKT. FORECAST (Sept. 24, 2017), https://iknowfirst.com/machine-learning-hedge-fund-artificial-intelligence-algotrading-and-hedge-funds.

[56] *Id.*

[57] *See* KPMG, REGULATORY TECHNOLOGY SERVICES (REGTECH): PREPARING YOUR FINANCIAL INSTITUTION FOR THE FUTURE 3 (2016), https://home.kpmg.com/content/dam/kpmg/sg/pdf/2016/11/sg-regulatory-technology-services.pdf.

[58] *See* Penny Crosman, *Will regtech kill bank jobs?*, AM. BANKER (Oct. 5, 2017), https://www.americanbanker.com/news/will-regtech-kill-bank-jobs.

[59] *See id.* (*quoting* venture capitalist Dan Kimerling, "Of course [RegTech] is going to cause us to fire people. Why would we invest in software if we can't find cost savings somewhere else?").

[60] Daniel Lucien Bühr, Lalive (Zurich), *Getting the Deal Through, Risk and Compliance Management 2017* (June 16, 2017), https://gettingthedealthrough.com/area/96/article/29103/risk-compliance-management-global-overview/.

[61] *See* Jo Ann Barefoot and Matthew Van Buskirk, *BankThink Regtech could help stop human trafficking*, AM. BANKER (Jan. 31, 2018),

For instance, as technology improves, employees will spend less time completing mundane tasks and more time focusing on larger scale strategic initiatives.[62] RegTech might also divert those seeking compliance jobs to the growing software development space.[63]

In addition to the cost-savings benefits of machine learning, people within the AI community are beginning to realize its potential impact on AML compliance. Newly developed algorithms can flag transactions involving suspicious persons and addresses, the frequency and duration between transactions, and the devices used to execute those transactions.[64] Despite its promise of efficiency and unprecedented accuracy, machine learning in AML has yielded trepidation, rather than unbridled fervor, from some in the financial services industry.[65] A portion of the underlying concerns behind machine learning's utility stems from regulators' lack of trust and understanding of its complex methodology.[66] However, one might expect current trepidation over the risks that power this evolutionary technology to begin to dissipate as RegTech becomes more mainstream.[67]

Blockchain is another popular development in the AI community. Blockchain refers to an electronically distributed ledger, protected from tampering through cryptography, for all cryptocurrency transactions.[68] Blockchain not only proved its use for financial institutions in the back-end clearing and settlement process,[69] but also in other business segments such as

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https://www.americanbanker.com/opinion/regtech-could-help-stop-human-trafficking (explaining new software has increased analysts production by a "factor of ten.").

[62] *See* Crosman, *supra* note 58 (*quoting* the U.S. Director of BSA/AML Compliance at BBVA Compass, Lyn Hall-Fore, "This [implementation of two RegTech bots] is allowing me to free up manpower to do something more innovative, more challenging, looking at the risks, seeing how we're going to monitor those, and moving away some of that administrative and managerial aspects that were a waste of time.").

[63] *Id.*

[64] *See* Petrasic et al., *supra* note 42.

[65] *See* ACCENTURE, EVOLVING AML JOURNEY 2 (2017), https://www.accenture.com/_acnmedia/PDF-61/Accenture-Leveraging-Machine-Learning-Anti-Money-Laundering-Transaction-Monitoring.pdf.

[66] *Id.*

[67] *See* Fintechnews Switzerland, *Regtech 2.0 Enters New Growth Phase as Sector Moves From Niche to Mainstream*, FINTECHNEWS (Feb. 23, 2018), http://fintechnews.ch/regtech/regtech-20-enters-new-growth-phase-sector-moves-niche-mainstream-study/16282/.

[68] *See* Lincy Jacob, *Blockchain in banking: Bitcoin and beyond*, INFOSYS LIMITED (July 4, 2017), http://www.infosysblogs.com/finspeak/2017/07/blockchain_in_banking_bitcoin_.html ("[p]ermissioned" Blockchain networks are slightly different from their "permissionless" counterparts in that permissioned networks only permit pre-approved users to post transactions on the distributed ledger).

[69] *Id.*

retail and insurance. Blockchain, given its tamper-proof essence, has also found utility in the law enforcement community to detect financial crimes.[70] It is estimated that widespread implementation of Blockchain could save the economy upwards of $20 billion per year.[71]

Like general FinTech services, RegTech addresses several deficiencies in existing regulatory compliance models and offers game-changing solutions for consumers and institutions. Unfortunately, the legislative response to new developments has not been as easily identifiable as the inherent need for RegTech.

## II. CURRENT STATE OF FEDERAL REGULATORY AFFAIRS

Historically, the U.S. regulatory system has largely taken a reactive approach with respect to major financial regulation.[72] For example, it was not until after the Great Depression and Global Financial Crisis of 2008 that Americans saw an influx of New Deal, Dodd-Frank, and JOBS Act reforms.[73] Catastrophic failures in the economy preceded the spur of new financial regulation in both of the United States' darkest financial periods. It is against this grave backdrop that legislators should consider shifting towards a proactive approach to dealing with financial regulation. Such an approach would not only serve to prevent another economic downturn, but also maximize efficiency, encourage innovation, and foster growth within the financial services industry.

The euphoric buzz that surrounds FinTech and RegTech start-ups in Silicon Valley has been incessant and voluminous enough to be heard across the country in Washington, D.C. However, more than merely hearing the buzz is necessary to facilitate meaningful legislative change. The Obama Administration, cognizant of the inevitable rise of FinTech, made an initial push to integrate FinTech into federal agencies through the Financial Services Innovation Act of 2016.[74] Despite its forward-looking vigor, the bill

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[70] *See* Kevin Petrasic et al., *Blockchain's Steady March to Legitimacy*, WHITE & CASE (Aug. 8, 2017), https://www.whitecase.com/publications/alert/blockchains-steady-march-legitimacy.

[71] *See* Andrew Meola, *How banks and financial institutions are implementing Blockchain technology*, BUSINESS INSIDER (Sept. 20, 2017), http://www.businessinsider.com/blockchain-technology-banking-finance-2017-9.

[72] *See* Charles K. Whitehead, *Reframing Financial Regulation*, 90 B.U. L. REV. 1, 2 (2010).

[73] *See* Merrill Fabry, *The Law That Started the New Deal*, TIME (Mar. 9, 2016) http://time.com/4249815/emergency-banking-relief-act/; *see also* Lori Schock, Director, Office of Investor Education and Advocacy, SEC, Speech at InvestEd 2012: Outline of Dodd-Frank Act and JOBS Act (June 9, 2012), https://www.sec.gov/news/speech/2012-spch060912ljshtm.

[74] *See, e.g.*, H.R. 6118, 114th Cong. (2015-2016) (The Financial Services Innovation Act of 2016 would have installed a Financial Services Innovation Office (FSIO) at one or more agencies to promote innovation and assist those covered under the Bill in acclimating to the new technology).

has not progressed past the introductory stage.

When President Trump's Administration formally took over the White House early in 2017, there was speculation on how the RegTech industry would respond to several promises to peel back much of the Obama Administration's financial regulations.[75] After all, the desperate need for more efficient RegTech innovation is somewhat predicated on exorbitant regulatory expenditures.[76] On its surface, a peel back of "crippling" regulations[77] combined with what promises to be a favorable tax reform for financial institutions[78] and changes in leadership,[79] should result in an overall decrease in regulatory spending.[80] As regulatory costs decrease, the need for RegTech could similarly decrease with it. However, that has not yet been the case.[81] Banks have been steadfastly committed to RegTech as the way of the future.[82] According to a recent study, financial institutions are expected to have

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[75] *See* Ben Protess & Julie Hirschfeld Davis, *Trump Moves to Roll Back Obama-Era Financial Regulations*, N.Y. TIMES (Feb. 3, 2017), https://www.nytimes.com/2017/02/03/business/dealbook/trump-congress-financial-regulations.html (in February of 2017, President Trump laid out vague, yet ambitious plans to "chisel away" former President Obama's legacy of financial regulation during the aftermath of the Global Financial Crisis of 2008).

[76] *E.g.,* Jonathan Nieh, *Regtech Reducing Compliance Costs for Early Adopters in Financial Markets*, CROWDFUND INSIDER (May 4, 2017), https://www.crowdfundinsider.com/2017/05/99646-regtech-reducing-compliance-costs-early-adopters-financial-markets/.

[77] *See* Dominic Rushe, *Trump orders Dodd-Frank review in effort to roll back financial regulation*, THE GUARDIAN (Feb. 3, 2017), https://www.theguardian.com/us-news/2017/feb/03/trump-dodd-frank-act-executive-order-financial-regulations.

[78] *See* Robert Karr, *How the Proposed Tax Plan Could Impact US Banks*, MKT. REALIST (Oct. 27, 2017), https://marketrealist.com/2017/10/proposed-tax-plan-impact-us-banks (the Trump Tax Reform promises a "substantial windfall" for financial institutions, already benefiting from several Federal Reserve rate hikes, in the form of greater cash from operations due to lower corporate tax rates).

[79] *See* Jeff Cox, *The anti-regulatory environment that Trump promised just got a big boost*, CNBC (Nov. 19, 2017), https://www.cnbc.com/2017/11/19/the-anti-regulatory-environment-that-trump-promised-just-got-a-big-boost.html.

[80] *See* Binyamin Appelbaum, *Jerome Powell, the Fed Chair Nominee, Sees Continuity if Confirmed*, N.Y. TIMES (Nov. 28, 2017), https://www.nytimes.com/2017/11/28/us/politics/jerome-powell-federal-reserve-nominee-testimony.html (Jerome Powell, Chairman of the Federal Reserve, has said, "tailoring of regulation is one of our most fundamental principles. We want it to decrease in intensity and stringency as we move down [to smaller banks]." Furthermore, Mr. Powell has maintained that "unnecessarily uniform" regulations have served as an "ineffective impediment to growth" in the banking industry).

[81] *See* Tom Harwood, *Why RegTech will continue to boom in 2018*, THE GLOBAL TREASURER (Dec. 4, 2017), https://www.theglobaltreasurer.com/2017/12/04/why-regtech-will-continue-to-boom-in-2018/.

[82] *See id.*

a total RegTech investment of up to $100 billion within the next two years.[83] Affirming the suggested positive outlook on industry growth, the Trump Administration advocated for the use of RegTech applications through the Financial Transparency Act of 2017.[84] Like the Obama Administration's initiative, however, the Trump Administration's effort has yet to pass through the introductory phase in Congress.

The Comptroller of the Currency, Joseph M. Otting, is aware of RegTech's benefits and has prioritized "enhancing the value of national bank and federal savings association charters, reducing unnecessary burden, and promoting economic opportunity while maintaining the safety and soundness of the federal banking system."[85] This statement is in line with Mr. Otting's predecessor, Thomas J. Curry, and his efforts to make "special-purpose national charters" available to FinTech companies offering bank services to consumers.[86] Despite steadfast resistance from State Banking Regulators, [87] on July 31, 2018, the Office of the Comptroller of Currency ("OCC") announced that it would begin accepting applications for national bank charters from non-depository FinTech firms engaged in the business of banking.[88] While the future success of this program is currently unknown, any FinTech firms that will operate under a national bank charter instantly benefit from significant preemption over state law.[89]

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[83] *See* Evan Weinberger, *Banks Hope RegTech Can Adapt to Easing Oversight*, LAW360 (Aug. 11, 2017), https://www-law360-com.gwlaw.idm.oclc.org/articles/953447/banks-hope-regtech-can-adapt-to-easing-oversight.

[84] H.R.1530, 115th Cong. (2017-2018) (The Financial Transparency Act of 2017 sought to utilize RegTech to make the information reported to financial agencies electronically searchable).

[85] *Otting Sworn in as Comptroller of the Currency; Pushes for Regulation Review*, BUCKLEY SANDLER: INFOBYTES (Nov. 28, 2017), https://buckleysandler.com/blog/2017-11-28/otting-sworn-comptroller-currency-pushes-regulation-review.

[86] *See National Bank Charters Will Be Available for Fintech Companies, Comptroller of the Currency Says at IIEL Event*, GEORGETOWN LAW (Dec. 9. 2017), https://www.law.georgetown.edu/news/web-stories/national-bank-charters-will-be-available-for-fintech-companies-comptroller-of-the-currency-says-at-iiel-event.cfm.

[87] *See* V. Gerard Comizio & Nathan S. Brownback, *State Bank Regulators Challenge OCC's Authority to Issue Fintech Charters*, FRIED, FRANK, HARRIS, SHRIVER & JACOBSON LLP (June 4, 2017), http://www.friedfrank.com/siteFiles/Publications/2017-06-04-state-bank-regulators-challenge-occs-authority-to-issue-finte...%20(002).pdf; *see also* Def. Mot. to Dismiss, *Conference of State Bank Supervisors v. OCC*, Civ. Action No. 17-0763 (D.D.C. Apr. 30, 2018) (alleging that the special purpose national banks charter for FinTech startups is an unlawful exercise of the OCC's authority).

[88] *OCC Begins Accepting National Bank Charter Applications From Financial Technology Companies*, OCC (July 31, 2018), https://www.occ.treas.gov/news-issuances/news-releases/2018/nr-occ-2018-74.html.

[89] OFFICE OF THE COMPTROLLER OF THE CURRENCY, APPENDIX A: FEDERAL PREEMPTION OF STATE AND LOCAL FAIR LENDING AND MORTGAGE LENDING LAWS

This new development appears to directly cut against the United States' initial "wait and see approach."[90] The Federal Reserve had previously justified its passive stance when it said that much of the ground-breaking innovations such as Blockchain are still "years away from full implementation,"[91] and thus it was not clear what kind of regulation was necessary. The OCC's recent announcement, coupled with its guidance to FinTech companies applying for national charters,[92] indicates that the United States is shifting towards a proactive regulatory approach to FinTech companies.

## III. POTENTIAL SOLUTION: REGULATORY SANDBOX

At this juncture, Congress faces a daunting task in crafting a new regulatory environment that simultaneously fosters innovation and prevents against unknown risks in emerging technologies. This utopian regulatory environment might initially seem implausible given its twin goals appear to cut against one another. Upon a deeper look, however, a harmonious integration between these ideals is attainable through the friendly confines of a "regulatory sandbox."[93] A regulatory sandbox is a safe space that strives to increase competition by permitting businesses to test new innovations on real consumers.[94] Creating such a space presents legislators, financial institutions, start-ups, and consumers with a unique opportunity to move forward in unison.[95]

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1 (2010) https://www.occ.treas.gov/news-issuances/news-releases/2010/nr-occ-2010-39c.pdf.

[90] *See* Sviatoslav Rosov, *Regulators welcome fintech but aren't sure what to do with it*, CFA INST. TALK (Feb. 23, 2017), http://www.cityam.com/259602/regulators-wait-and-see-attitude-regulating-fintech (among the many concerns embedded in the proper regulatory approach, legislators need to have a firm grasp on exactly which "equivalent parts" of the existing system Blockchain will be replacing to develop proper regulation).

[91] DAVID MILLS ET AL., FIN. & ECON. DISCUSSION SERIES FED. RES. BOARD, DISTRIBUTED LEDGER TECHNOLOGY IN PAYMENTS, CLEARING, AND SETTLEMENT 3 (2016), https://doi.org/10.17016/FEDS.2016.095.

[92] *See generally* OFFICE OF THE COMPTROLLER OF THE CURRENCY, COMPTROLLER'S LICENSING MANUAL SUPPLEMENT (2018), https://www.occ.treas.gov/publications/publications-by-type/licensing-manuals/file-pub-lm-considering-charter-applications-fintech.pdf.

[93] *See* Ivo Jenik, *Regulatory Sandboxes: Potential for Financial Inclusion?*, CONSULTATIVE GROUP TO ASSIST THE POOR (Aug. 17, 2017), http://www.cgap.org/blog/regulatory-sandboxes-potential-financial-inclusion (explaining that regulatory sandboxes allow FinTech startups to conduct live tests in controlled environments under the supervision of a regulator, thus minimizing potential risks behind the technology).

[94] *See, e.g.*, FIN. CONDUCT AUTHORITY, REGULATORY SANDBOX (2015), https://www.fca.org.uk/publication/research/regulatory-sandbox.pdf.

[95] *Id.*

The United Kingdom's Financial Conduct Authority ("FCA") provides a useful model of an existing regulatory sandbox.[96] The FCA has been running the most prominent FinTech regulatory sandbox since 2016.[97] The regulatory sandbox is considered a safe place to test prospective innovations because the FCA methodically admits a specific number of firms in increments (cohorts).[98] Entrance into the regulatory sandbox not only provides firms with a secure forum for innovation, but also helps drive investments by providing investors with a "degree of reassurance" through internal oversight programs and a rigorous application process.[99]

To be considered for entry into a cohort, a firm must provide the FCA with its general business information, innovation-specific information, and an overview of the prospective company's "testing plan."[100] The FCA notes that each "test" a company runs in the regulatory sandbox is "expected to have a clear objective" and to be "conducted on a small scale."[101] To ensure compatibility, the FCA imposes "no word limits" on its applications to encourage firms to "give [the FCA] as much detail as possible to support your application."[102] During the application process, competitive firms should explain why the firm needs the regulatory sandbox's structure to operate its desired test in a "live environment."[103]

The regulatory sandbox functions as a catalyst for future innovation by accepting firms that would otherwise be precluded from operating tests due to inhibiting regulations or the unknown risks inherent in new technology. Recently, the FCA admitted Barclays, a renowned investment banking

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[96] *Id.*
[97] *See* FIN. CONDUCT AUTHORITY, REGULATORY SANDBOX LESSONS LEARNED REPORT, 8 (2017), https://www.fca.org.uk/publications/research/regulatory-sandbox-lessons-learned-report (the FCA has accepted applications from start-ups within the following sectors: General Insurance & Protection, Pensions & Retirement Income, Retail Banking, Retail Investments, Retail Lending, and Wholesale).
[98] *See Regulatory Sandbox*, FIN. CONDUCT AUTHORITY, (May 11, 2015), https://www.fca.org.uk/firms/regulatory-sandbox (the FCA has received 69, 77, 61, and 69 applications in Cohorts 1, 2, 3, and 4, respectively. In Cohort 1, the FCA admitted 24 firms, followed by 31, 18, and 24 in Cohorts 2, 3, and 4, respectively, for live testing within the regulatory sandbox).
[99] *See* FIN. CONDUCT AUTHORITY, *supra* note 97 at 4 (explaining an early indication of success behind the regulatory sandbox's implementation has been that "at least 40% of firms which completed testing the first cohort received investment during or following their sandbox tests.").
[100] *See Regulatory Sandbox Application Form*, FIN. CONDUCT AUTHORITY, https://www.fca.org.uk/regulatory-sandbox-application-form (last visited Apr. 10, 2018).
[101] *Id.*
[102] *Id.*
[103] *Id.*

services institution, into Cohort 3 of their regulatory sandbox.[104] Barclays is developing a RegTech "proposition which tracks updates to regulations within the FCA Handbook and aligns their implementation to Barclays' internal policies."[105] If successful, this new technology would "provide the digital connectivity between financial institutions and the regulator" allowing institutions to avoid costly compliance mistakes due to changes in regulation while providing regulators with a method to track how new regulations are affecting firms.[106] Given the aforementioned costly penalties imposed on firms for failures in regulatory compliance,[107] it seems unlikely that Barclays would have risked implementing this innovation without first testing it in the regulatory safe space.

Each firm within the regulatory sandbox benefits from working closely with a case officer that advises firms on how its prospective products and services could be tailored to meet relevant regulatory requirements.[108] Other regulatory sandbox tools include restricted authorization by the FCA, the potential for waivers or modification to existing regulatory sandbox rules, and "no enforcement action letters."[109] Given the uniqueness behind each start-up, the FCA's willingness to personalize the regulatory sandbox experience for each company is integral to its success.[110]As a result of the FCA's regulatory sandbox framework, the United Kingdom has firmly positioned itself to become the new "global capital of financial disruption."[111]

Since the commencement of the FCA's regulatory sandbox in May of 2016, several other countries such as Hong Kong, Australia, Malaysia, and Canada have implemented similar regulatory sandbox approaches.[112] Undoubtedly, the success of these regulatory initiatives will be measured over time. At a minimum, however, the regulatory sandbox has proven to be a launching point towards modern financial regulation in an increasingly

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[104] *See FCA reveals next round of successful firms in its regulatory sandbox*, FIN. CONDUCT AUTHORITY (June 12, 2017), https://www.fca.org.uk/news/press-releases/fca-reveals-next-round-successful-firms-its-regulatory-sandbox.
[105] *Id*.
[106] *See* Yolanda Bobeldijk, *The Fintech Files – Regtech to the rescue*, FIN. NEWS (Jan. 4, 2018), https://www.fnlondon.com/articles/the-fintech-files-regtech-to-the-rescue-20180104.
[107] *See* Finch, *supra* note 36.
[108] *See* FIN. CONDUCT AUTHORITY, *supra* note 97, at 4–5 (discussing the prominent role case officers play in sharing their expertise with testing firms within the regulatory sandbox and how to tailor specific strategies for optimal compliance within the regulatory sandbox).
[109] *See e.g.*, *Sandbox Tools*, FIN. CONDUCT AUTHORITY (Dec. 15, 2017), https://www.fca.org.uk/firms/regulatory-sandbox/sandbox-tools (last updated Dec. 15, 2017).
[110] *Id.*
[111] *E.g.*, *What is a regulatory sandbox?*, BANCO BILBAO VIZCAYA ARGENTARIA (Nov. 20, 2017), https://www.bbva.com/en/what-is-regulatory-sandbox/.
[112] *See* Douglas W. Arner et. al., *Fintech, Regtech, and the Reconceptualization of Financial Regulation*, 37 NW. J. INT'L L. & BUS. 371, 408-09 (2017).

complex financial services environment.

## IV. THE UNITED STATES SHOULD ADOPT A FEDERAL REGULATORY SANDBOX

The disruption of FinTech and RegTech innovations have only just begun. Regulatory bodies cannot deny the existence and magnitude of this movement, and appear to have one of two choices: either implement a proactive or passive approach towards financial regulation.[113] It appears the global consensus is to adopt a proactive plan modeled after the United Kingdom's regulatory sandbox.[114] The United States however, has not followed the trend to this point. For example, Gerald Tsai, a Federal Reserve Attorney, expressed some skepticism about the widespread implementation of regulatory sandboxes in the United States.[115] But if the United States does not adopt a proactive approach it will risk losing domestic investment in new FinTech products and services to foreign jurisdictions.[116]

### *A. The Passive Nature Behind the Federal Government's Approach*

Perhaps a possible explanation for the slow pace at which the United States federal government assimilates to new trends in the financial services industry is the "fragmented" nature of the financial regulatory system.[117] While some might assert this regulatory system has had an overall positive

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[113] *See* JAN BELLENS ET AL., ERNST & YOUNG ADVISORY SERVS. LTD., AS FINTECH EVOLVES, CAN SERVICES INNOVATION BE COMPLIANT? 4, 9 (2017), http://www.ey.com/Publication/vwLUAssets/ey-the-emergence-and-impact-of-regulatory-sandboxes-in-uk-and-across-apac/$FILE/ey-the-emergence-and-impact-of-regulatory-sandboxes-in-uk-and-across-apac.pdf.

[114] *See* Khushboo Agarwal, *Playing in the Regulatory Sandbox*, NYU J. L. BUS. (Jan. 8, 2018), https://www.nyujlb.org/single-post/2018/01/08/Playing-in-the-Regulatory-Sandbox.

[115] *See* Sara Merken, *States Embrace Fintech Sandbox Concept as Federal Action Stalls*, BNA (Sept. 21, 2017), https://www.bna.com/states-embrace-fintech-n73014464317/ (Tsai, the director of applications, enforcement and FinTech at the Federal Reserve Bank of San Francisco, told the American Bar Association that he does not see regulatory sandboxes as "something we in the United States are going to be using much in the near future."); *see also* JD Alois, *Federal Reserve Attorney: US Not Interested in Fintech Sandboxes*, CROWDFUND INSIDER (Sept. 18, 2017), https://www.crowdfundinsider.com/2017/09/121972-federal-reserve-attorney-us-not-interested-fintech-sandboxes/ (*quoting* Tsai, "I don't think it's fair to compare the United States" to other smaller economies that have had success with the regulatory sandbox approach).

[116] *See* J. Parker Murphy, *More Sense Than Money: National Charter Option for Fintech Firms Is the Right Choice*, 18 N.C.J.L. & TECH. 359, 403 (2017).

[117] *See* U.S. GOV'T ACCOUNTABILITY OFF., GAO-16-175, FINANCIAL REGULATION: COMPLEX AND FRAGMENTED STRUCTURE COULD BE STREAMLINED TO IMPROVE EFFECTIVENESS 2 (2016) (describing the U.S. financial regulatory structure as "complex, with responsibilities fragmented among multiple agencies that have overlapping authorities.").

impact on the economy,[118] it unquestionably places start-ups and existing financial institutions in precarious situations where they might fall under the overlapping authority of national and state regulators.[119] Under the existing regulatory system, the factual reality is some start-up FinTech companies may choose to only operate intrastate to avoid spending money to ensure compliance with potentially fifty different states' regulatory systems.

The fragmented regulatory framework under which start-ups and financial institutions operate in the United States fosters an increasing degree of regulatory uncertainty for constituents within the industry. However, the view that the current system needs to be utterly displaced for burgeoning technologies to thrive is extreme at best, and unrealistic at worst. A more plausible argument is that if implemented correctly, federalism is far from the problem, but rather an integral part of the solution.

It is quite remarkable that in an age with innovative, disruptive technology, one could find comfort in addressing regulatory questions by referencing the archaic Founders of the Constitution. An underlying reason the Founders opted for a decentralized approach to government was out of fear of a tyrannical majority rearing its ugly head again.[120] Whatever the initial motivations were for federalism, it has benefited the development of regulation in the United States. Perhaps most relevant in this context is federalism's inherent flexibility, which promotes innovation and competition within state governments.[121] Specifically, different from a consolidated regime where constituents answer to a single governmental entity, the United States' regulatory system promotes the "public good" by empowering state governments to "pioneer useful changes" through innovative policy decisions.[122]

An underlying hope in this trailblazing utopia of meaningful legislative change is for all states to follow in the footsteps of states that initially

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[118] *See id.* at 2 (GAO also noted that this regulatory system, while imperfect, has contributed to the "overall growth and stability" in the U.S. economy since the 2007-2009 Financial Crisis).

[119] *See* U.S. GOV'T ACCOUNTABILITY OFF., GAO-17-361, FINANCIAL REGULATION: INFORMATION ON SUBSECTORS AND REGULATORY OVERSIGHT 2 (2017) (GAO cautioned that, depending on the "extent to which the [FinTech] firms provide a regulated service," a FinTech firm that operates as a lender could be subject to; "federal regulation, examination by the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, Office of the Comptroller of the Currency," state licensing and regulation, Securities and Exchange Commission oversight, and "enforcement actions by the Bureau of Consumer Financial Protection and the Federal Trade Commission.").

[120] *See e.g.*, THE FEDERALIST NO. 51 (James Madison defends what he posited as "the need for a system with checks and balances to control the abuses of government.").

[121] *See* Michael W. McConnell, *Federalism: Evaluating the Founders' Design*, 54 U. CHI. L. REV. 1484, 1493 (1987).

[122] *Id.*

prioritized regulatory reform.[123] For example, a state that is hesitant to acclimate to new FinTech innovation will likely reconsider its regulatory position when it begins to lose tax-paying constituencies to states that have implemented proactive regulatory changes. If state regulatory innovation is the first step towards a less confusing national regulatory environment, a more profound question arises: could the regulatory sandbox be desirable on the state-level?

### *B. State-Level Implementation of the Regulatory Sandbox*

As previously mentioned, other countries have implemented live regulatory sandboxes on a national level. While this model proved to be successful, it is unclear whether regulatory sandboxes would prove equally as successful on a purely state-level. At this juncture, states appear to have two options. They could either implement independent, state-specific regulatory sandboxes,[124] or alternatively, adopt a regionalized approach.[125] It is also possible the United States could utilize a mixture of these two options across the country, according to state preference.

Arizona became the first state in the United States to offer a regulatory sandbox when Governor Doug Ducey signed House Bill 2434 into law.[126] The legislation came in the wake of numerous remarks from Arizona Attorney General Mark Brnovich:

> The idea of a regulatory fintech sandbox is not new, and while it's being discussed at the federal level, Congress is moving at a glacial pace . . . Arizona has always been a state for big ideas and this is just one more place where we are trailblazing in entrepreneurship and innovation. I hope to see the sandbox serve as a catalyst for capital investment in Arizona and provide opportunities for Arizona businesses and consumers to thrive.[127]

Brnovich also noted that a safe experimental space will lower the "barriers of entry" for small businesses entering the industry and provide aspiring

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[123] *See generally* Pietro S. Nivola, *Why Federalism Matters*, BROOKINGS (Oct. 2005) https://www.brookings.edu/research/why-federalism-matters/ (discussing the positive effects of California pioneering change in air quality policies).

[124] Merken, *supra* note 115 (explaining that Arizona and Illinois are at least two states that have encouraged implementation of a state-specific regulatory sandbox).

[125] *See* Paul Sweeney, *Fintech Sandbox? States, OCC Mull Regulatory Options*, DEBANKED (May 2, 2017), https://debanked.com/2017/05/fintech-sandbox-states-occ-mull-regulatory-options/.

[126] H.R. 2434, 53rd Leg., 2d Reg. Sess. (Az. 2018).

[127] Press Release, Mark Brnovich, Arizona Attorney General, Arizona Becomes First State in U.S. to Offer Fintech Regulatory Sandbox (last visited Jan. 11, 2019), https://www.azag.gov/press-release/arizona-becomes-first-state-us-offer-fintech-regulatory-sandbox.

entrepreneurs access to venture capital that would otherwise unavailable.[128]

Modeled after the United Kingdom's regulatory sandbox, Arizona's regulatory sandbox also allows companies to test innovative services in a "controlled environment."[129] Specifically, companies within the regulatory sandbox receive exposure to a maximum of five thousand consumers for testing, for up to a twelve-month period, with the "possibility for extensions."[130] Illinois, under the leadership of Bryan Schneider, Secretary of the Illinois Department of Financial and Professional Regulation,[131] hopes to "move a bill in the next legislative session that will 'mirror' Arizona's approach."[132]

While these statements surely represent a growing awareness of the need for meaningful legislative change, state-specific approaches might undermine the goal of encouraging innovation through legislative clarity. For example, Arizona is the first state to successfully implement a regulatory sandbox. Next, assume Illinois adopts regulations that are substantially similar to Arizona's. Under this set of facts, a company with operations in both jurisdictions would be held accountable by the two states' similar, yet different sets of rules. On a larger scale, a company with nationwide operations could theoretically be subject to idiosyncratic legislative rules in all fifty states. This outcome, while serving to myopically promote innovation, would ultimately cut against the goal of legislative uniformity that would give investors and entrepreneurs less exposure to liability.

A modified regional regulatory sandbox offers a potential compromise between the passive national approach and the eagerness of at least some states to pioneer proactive change.[133] The regional approach will help mitigate against at least some of the fragmented concerns with a state-specific system. For example, the proposed New England Regulatory FinTech Sandbox, would serve to "stitch together" components of the United Kingdom's approach.[134] Under the New England Regulatory regime, the six states in New England (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont), uniformly express "universal openness," as no one

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[128] *See* JD Alois, *Arizona AG Mark Brnovich Calls for Creation of Fintech Sandbox*, CROWDFUND INSIDER (Sept. 8, 2017), https://www.crowdfundinsider.com/2017/09/121630-arizona-ag-mark-brnovich-calls-creation-fintech-sandbox/.

[129] Merken, *supra* note 115.

[130] *Id.*

[131] Bryan A. Schneider, *Statement on the Illinois Fintech Regulatory Roundtables*, ILL. DEP'T OF FIN. & PROFESSIONAL REG., (Mar. 14, 2017), https://www.idfpr.com/News/2017/3142017StatementIllinoisFinTechRegRoundtables.asp.

[132] Merken, *supra* note 115.

[133] *Id.* (describing that while state competition is an overall benefit for the industry and its stakeholders, states may ultimately have to work together to achieve an optimal innovative regulatory environment).

[134] *See* Sweeney, *supra* note 125.

state wishes to be viewed as "being a barrier to innovation."[135] With several states adopting under the same rules, companies that operate in regional regulatory sandboxes should feel less susceptible to potential litigation arising from idiosyncratic state requirements.

While both the state-specific and regional regulatory sandboxes encourage future investment and innovation, each fragmented legislative approach ultimately falls short because the patchwork nature of both regimes add to the current legislative confusion.[136]

### *C. Federal Regulatory Sandbox*

Since both state-specific and regional regulatory sandboxes ultimately yield unsatisfactory results, the federal government should follow the United Kingdom's approach[137] and implement a federal regulatory sandbox. With several regulatory sandboxes firmly in place across the globe[138]—and many more currently being considered[139]—much of the initial framework for creating a successful United States regulatory scheme already exists.

The United States is gaining momentum towards adopting a proactive, federal regulatory sandbox approach. For example, the Consumer Financial Protection Bureau ("CFPB") as part of its Project Catalyst recently issued a No-Action Letter that will enable Upstart Network, Inc. ("Upstart") to test its model for "underwriting and pricing applicants as described in the company's application materials."[140] The terms of the No-Action Letter require Upstart to "share certain information with the CFPB regarding the loan applications it receives, how it decides which loans to approve, and how it will mitigate risk to consumers, as well as information on how its model expands access to credit for traditionally underserved populations."[141] This back-and-forth communication in real-time between a start-up company and a federal agency closely mirrors the structure underlying the United Kingdom's successful regulatory sandbox. If successful, this experiment could serve as a meaningful springboard into a future of collaboration between enterprises and regulators in the financial world.

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135 *See id.*

136 *See* Mark Brnovich, *Regulatory Sandboxes can help states advance fintech*, AM. BANKER (Sept. 5, 2017), https://www.americanbanker.com/opinion/regulatory-sandboxes-can-help-states-advance-fintech.

137 *See FCA reveals next round of successful firms in its regulatory sandbox*, FIN. CONDUCT AUTHORITY (June 6, 2017), https://www.fca.org.uk/news/press-releases/fca-reveals-next-round-successful-firms-its-regulatory-sandbox.

138 *See* Agarwal, *supra* note 114.

139 *See* Dirk A. Zetzsche et. al., *Regulating A Revolution: From Regulatory Sandboxes to Smart Regulation*, 23 FORDHAM J. CORP. & FIN. L. 31, 67 (2017).

140 *See* Press Release, CFPB, CFPB Announces First No-Action Letter to Upstart Network (Sept. 14, 2017), https://www.consumerfinance.gov/about-us/newsroom/cfpb-announces-first-no-action-letter-upstart-network/.

141 *Id.*

From a logistical standpoint, if the Upstart venture experiences success as part of Project Catalyst, other enterprises likely will soon seek No-Action Letters from the CFPB. Despite some upheaval within the CFPB,[142] it is unlikely that the CFPB could effectively achieve the larger scale national legislative connectivity needed to parallel the disruptive technology it seeks to regulate.[143] To accommodate the great number of anticipated applications, the CFPB will need to expand, formulate a standardized application process, and gain adequate support from the federal government to reach as many enterprises as possible.[144] From a legal standpoint, the upside behind the CFPB as a pioneer in the federal regulatory sandbox field could be hampered by its inability to exempt companies from all federal consumer protection laws and the abundance of potential conflicts with state laws.[145] Due to these concerns, some are skeptical about the prospects of the CFPB's forward-looking initiative.[146]

At a minimum, Project Catalyst is an emblematic, meaningful first national step towards a proactive federal regulatory response to the disruptive technologies that are taking the world by storm. Irrespective of its prospective successes or failures, Project Catalyst represents the necessary ideological shift towards open-minded regulatory creativity that prioritizes principles over rules.[147] The foundation for a federal regulatory sandbox has already begun to take shape. With some fine-tuning and persistence, the federal regulatory sandbox will permit the United States to become a leader in the next wave of financial innovation.

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142 Norman Roos & Scott Baird, *U.S. Moves Ahead with Federal "Fintech Sandbox" – CFPB Announces Creation of Office of Innovation*, JD SUPRA (July, 30, 2018), https://www.jdsupra.com/legalnews/u-s-moves-ahead-with-federal-fintech-46652/ (the CFPB's newly created Office of Innovation is "designed to foster an environment where companies can advance new products and services without being unduly restricted by red tape that belongs in the 20th century.").

143 See JD Alois, *Congressman Patrick McHenry Slams CFPB, Labels Project Catalyst a Failure*, CROWDFUND INSIDER (Apr. 27, 2017), https://www.crowdfundinsider.com/2017/04/99309-congressman-patrick-mchenry-slams-cfpb-labels-project-catalyst-failure/.

144 *See* Bryan Knight, *Could the CFPB create its own regulatory sandbox?*, FINREGRAG (July 17, 2017), https://finregrag.com/could-the-cfpb-create-its-own-regulatory-sandbox-888b19077f44.

145 *See id*.

146 *See* Patrick McHenry, *CFBP's 'project catalyst' failed. Fintech deserves better*, AM. BANKER (Apr. 25, 2017), https://www.americanbanker.com/opinion/cfpbs-project-catalyst-failed-fintech-deserves-better.

147 *See* Mark Fenwick et. al., *Regulation Tomorrow: What Happens When Technology Is Faster Than the Law?*, 6 AM. U. BUS. L. REV. 561, 590 (2017).

## CONCLUSION

The United States operates the largest economy in the world, which is roughly seven times as large as the United Kingdom.[148] Given the enormous opportunity for domestic investment in the United States relative to the United Kingdom, its trailblazing legislative peer, it is puzzling why United States federal legislators have not initiated the next era of domestic legislative change. While some legislative concerns are well-founded,[149] a uniform approach to regulation at the national level will undoubtedly be a strong catalyst for economic growth.

It is encouraging, however, that state legislatures seem to be more willing to spearhead meaningful legislative change for prospective and existing FinTech and RegTech companies. Ideally, more states will join this lively conversation and advocate for meaningful change within their respective jurisdictions. The consequence of not realizing the enormity of this opportunity will unfortunately lead to talented individuals and companies taking their innovative solutions to other countries. This would be a costly and undesirable scenario for both consumers that would not have access to useful technology and financial institutions that would continue to waste resources and suffer from human inefficiencies when utilizing current regulatory compliance systems.

Ultimately, state-level regulatory sandboxes, while representative of the state-of-mind necessary to move into the next era of financial innovation and regulation, simply do not have the means to effectuate a comprehensive regulatory system capable of achieving the intended goal: fostering growth through legislative uniformity. A federal regulatory sandbox has the unique ability to enhance communication between the most innovative technological minds and regulators and to serve as a controlled experimental testing ground for the next wave of welcomed disruption.[150]

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[148] The World Bank, *World Development Indicators*, https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?view=chart (last visited Mar. 18, 2019) (DataBank statistics demonstrate the United States economy is the largest in the world with a GDP of $19.4 trillion. The next closest is China with $12 trillion. The United Kingdom is fifth with $2.6 trillion).

[149] Rosov, *supra* note 90.

[150] *See* Zetzsche et. al., *supra* note 139, at 78.